

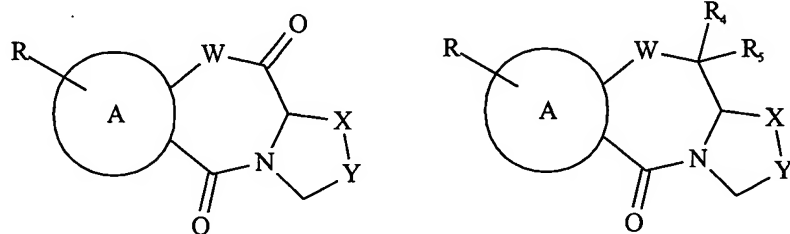
Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-28 (canceled)

Claim 29 (currently amended): A compound having the following formula, or a pharmaceutically acceptable salt thereof:



wherein A is thiazole, benzene, naphthalene, pyridine, pyrimidine, pyrazine, or quinoline;

R is one or more of halogen or NO₂;

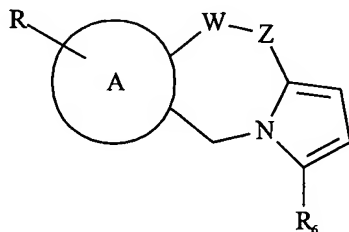
X-Y is CH₂-S, S-CH₂, CH₂-O, CH₂-S(O), S(O)-CH₂, CH₂-CH₂, CH₂-CH₂-CH₂, or CH₂-CH₂-CH₂;

R₄ is H or hydroxy;

R₅ is H, phenyl, or alkylamine; and

W is S or O[.]

or wherein the compound is



wherein

A is thiazole, benzene, naphthalene, pyridine, pyrimidine, pyrazine, or quinoline; and

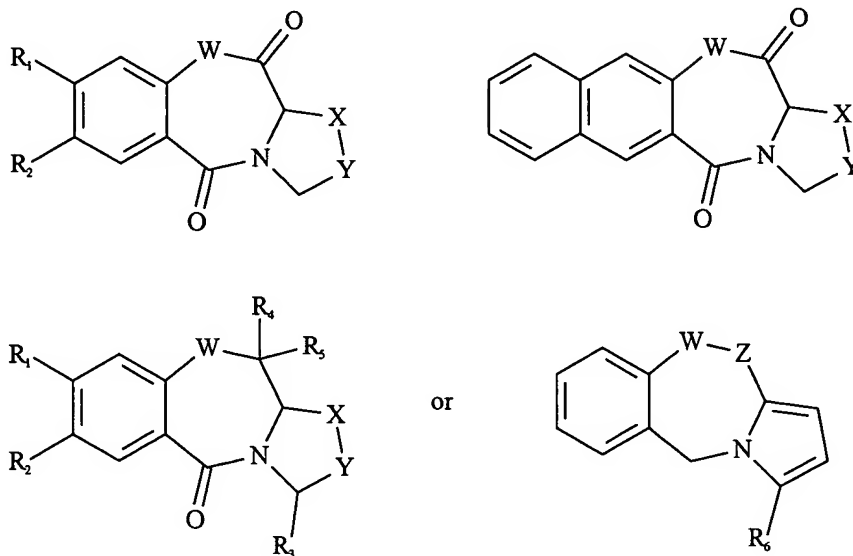
R is one or more of halogen or NO₂;

R₆ is H, substituted or unsubstituted alkyl or amine;

W is S or O; and

Z is S, O, CH₂, CH₂CH₂, or C=O.

Claim 30 (original): A compound having the following formula, or a pharmaceutically acceptable salt thereof, wherein the compound is:



wherein

X-Y is S-CH₂, CH₂-S, S(O)-CH₂, CH₂-S(O), or CH₂CH₂;

W is S or O;

R₁ is H or NO₂;

R₂ is H, halogen, lower alkyl or lower alkoxy;

R₃ is H;

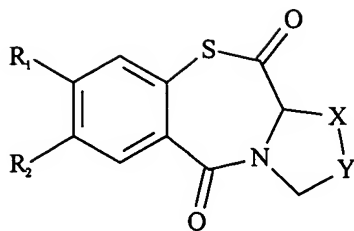
R₄ is hydroxy or H;

R₅ is phenyl or N(CH₂CH₂)₂NCH₃; and

R₆ is CH₂N(CH₂CH₂)₂NCH₃,

provided that R₁ and R₂ are not both H or not both alkoxy.

Claim 31 (original): The compound of claim 30, wherein the compound is



R₂ is H, halogen, lower alkyl or lower alkoxy;

provided that R₁ and R₂ are not both H or not both alkoxy.

β'

R_1 is H, R_2 is Br, X-Y is S-CH₂; or

R_1 is H, R_2 is CH_3 , X-Y is S- CH_2 ; or

R_1 is H, R_2 is H, X-Y is CH_2-S ; or

R_1 is H, R_2 is Cl, X-Y is $\text{CH}_2\text{-S}$; or

R_1 is H, R_2 is Br, X-Y is $\text{CH}_2\text{-S}$; or

R_1 is H, R_2 is CH_3 , X-Y is CH_2-S ; or

R_1 is NO_2 , R_2 is H , X-Y is $\text{CH}_2\text{-S}$; or

R_1 is H, R_2 is OCH_3 , X-Y is CH_2-S ; or

R_1 is H, R_2 is H, X-Y is $\text{CH}_2\text{-O}$; or

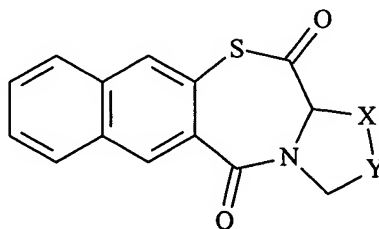
R₁ is H, R₂ is CH₃, X-Y is S(O)-CH₂; or

R_1 is H, R_2 is H, X-Y is $\text{CH}_2\text{-S(O)}$; or

R_1 is H, R_2 is Cl, X-Y is $\text{CH}_2\text{-S(O)}$; or

R₁ is H, R₂ is OCH₃, X-Y is CH₂-S(O).

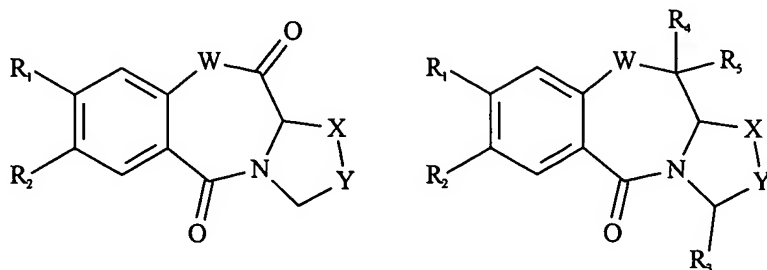
Claim 33 (original): The compound of claim 30, wherein the compound is



and X-Y is S-CH₂ or CH₂-S.

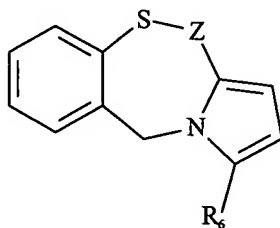
Claim 34 (original): The compound of claim 30, wherein X-Y is S-CH₂.

Claim 35 (original): The compound of claim 30, wherein the compound is:



and R_1 , R_2 and R_3 are H, R_4 is OH or H;
 R_5 is Ph or $N(CH_2CH_2)_2CH_3$; and
 $X-Y$ is CH_2-CH_2 .

Claim 36 (original): The compound of claim 30, wherein the compound is



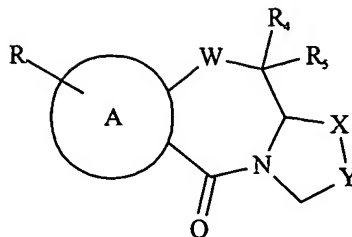
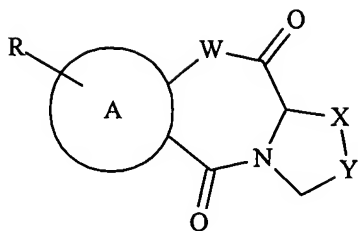
and R_6 is $CH_2N(CH_2CH_2)_2NCH_3$.

Claim 37 (original): A pharmaceutical composition comprising the compound of claim 29, or the pharmaceutically acceptable salt, and a pharmaceutically acceptable carrier.

Claim 38 (original): A pharmaceutical composition comprising the compound of claim 30, or the pharmaceutically acceptable salt, and a pharmaceutically acceptable carrier.

Claims 39-45 (canceled)

Claim 46 (new): A method of inhibiting a HIV integrase, the method comprising:
exposing the integrase to an integrase inhibiting amount of one or more anti-integrase compounds selected from the group consisting of the following compounds, or pharmaceutically acceptable salts thereof:



wherein A is thiazole, benzene, naphthalene, pyridine, pyrimidine, pyrazine, or quinoline;
R is one or more of halogen or NO₂;

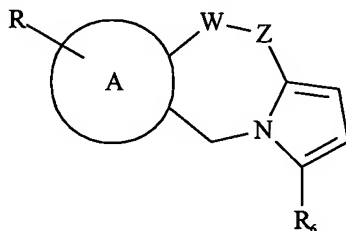
X-Y is CH₂-S, S-CH₂, CH₂-O, CH₂-S(O), S(O)-CH₂, CH₂-CH₂, CH₂-CH₂-CH₂, or CH₂-CH₂-CH₂-CH₂;

R₄ is H or hydroxy;

R₅ is H, phenyl, or alkylamine; and

W is S or O

or wherein the compound is



wherein

A is thiazole, benzene, naphthalene, pyridine, pyrimidine, pyrazine, or quinoline; and

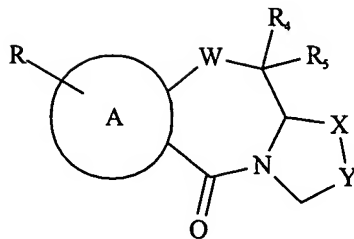
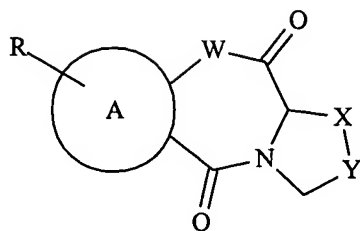
R is one or more of halogen or NO₂;

R₆ is H, substituted or unsubstituted alkyl or amine;

W is S or O; and

Z is S, O, CH₂, CH₂CH₂, or C=O.

Claim 47 (new): A method of treating HIV infection in a subject, comprising administering to the subject a therapeutically effective amount of a compound selected from the group consisting of:



wherein A is thiazole, benzene, naphthalene, pyridine, pyrimidine, pyrazine, or quinoline;
R is one or more of halogen or NO₂;

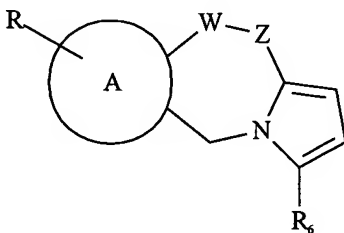
X-Y is CH₂-S, S-CH₂, CH₂-O, CH₂-S(O), S(O)-CH₂, CH₂-CH₂, CH₂-CH₂-CH₂, or CH₂-CH₂-CH₂;

R₄ is H or hydroxy;

R₅ is H, phenyl, or alkylamine; and

W is S or O

or wherein the compound is



wherein

A is thiazole, benzene, naphthalene, pyridine, pyrimidine, pyrazine, or quinoline; and

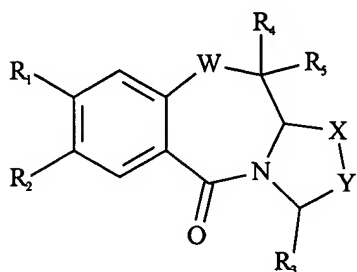
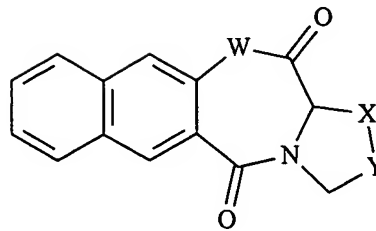
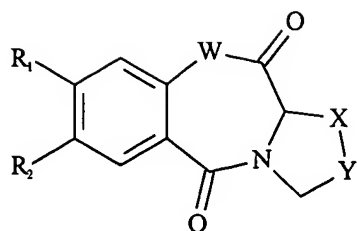
R is one or more of halogen or NO₂;

R₆ is H, substituted or unsubstituted alkyl or amine;

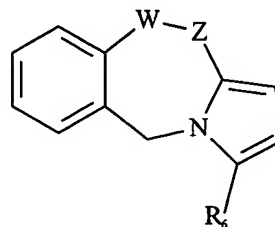
W is S or O; and

Z is S, O, CH₂, CH₂CH₂, or C=O.

Claim 48 (new): A method of inhibiting a HIV integrase, the method comprising:
exposing the integrase to an integrase inhibiting amount of one or more anti-integrase
compounds selected from the group consisting of the following compounds, or pharmaceutically
acceptable salts thereof:



or



wherein

X-Y is S-CH₂, CH₂-S, S(O)-CH₂, CH₂-S(O), or CH₂CH₂;

W is S or O;

R₁ is H or NO₂;

R₂ is H, halogen, lower alkyl or lower alkoxy;

R₃ is H;

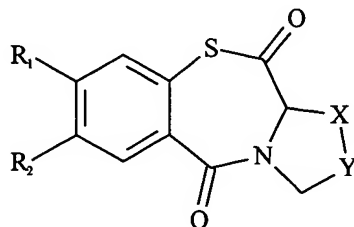
R₄ is hydroxy or H;

R₅ is phenyl or N(CH₂CH₂)₂NCH₃; and

R₆ is CH₂N(CH₂CH₂)₂NCH₃,

provided that R₁ and R₂ are not both H or not both alkoxy.

Claim 49 (new): The method of claim 48, wherein the compound is



and R₁ is H or NO₂;

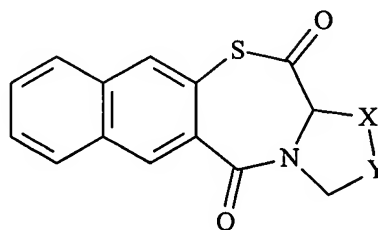
R₂ is H, halogen, lower alkyl or lower alkoxy;

provided that R₁ and R₂ are not both H or not both alkoxy.

Claim 50 (new): The method of claim 48, wherein

R_1 is H, R_2 is Cl, X-Y is S-CH₂; or
 R_1 is H, R_2 is Br, X-Y is S-CH₂; or
 R_1 is H, R_2 is CH₃, X-Y is S-CH₂; or
 R_1 is H, R_2 is H, X-Y is CH₂-S; or
 R_1 is H, R_2 is Cl, X-Y is CH₂-S; or
 R_1 is H, R_2 is Br, X-Y is CH₂-S; or
 R_1 is H, R_2 is CH₃, X-Y is CH₂-S; or
 R_1 is NO₂, R_2 is H, X-Y is CH₂-S; or
 R_1 is H, R_2 is OCH₃, X-Y is CH₂-S; or
 R_1 is H, R_2 is H, X-Y is CH₂-O; or
 R_1 is H, R_2 is CH₃, X-Y is S(O)-CH₂; or
 R_1 is H, R_2 is H, X-Y is CH₂-S(O); or
 R_1 is H, R_2 is Cl, X-Y is CH₂-S(O); or
 R_1 is H, R_2 is OCH₃, X-Y is CH₂-S(O).

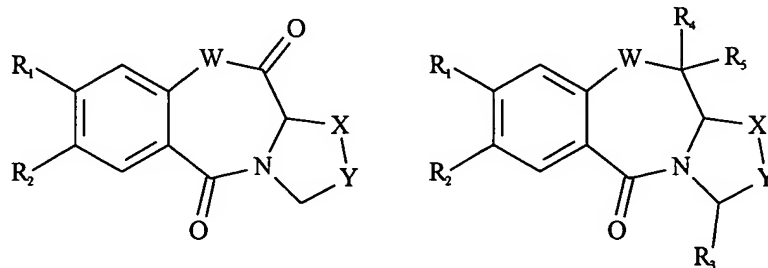
Claim 51 (new): The method of claim 48, wherein the compound is



and X-Y is S-CH₂ or CH₂-S.

Claim 52 (new): The method of claim 48, wherein X-Y is S-CH₂.

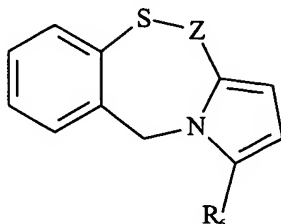
Claim 53 (new): The method of claim 48, wherein the compound is:



and R_1 , R_2 and R_3 are H, R_4 is OH or H;
 R_5 is Ph or N(CH₂CH₂)₂CH₃; and

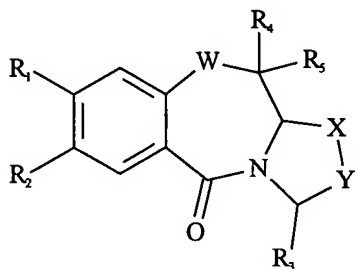
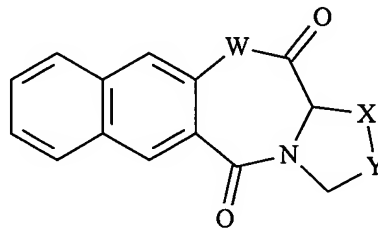
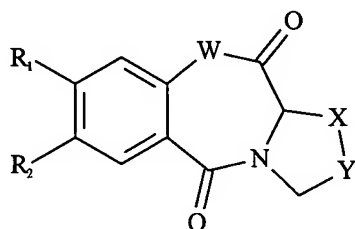
X-Y is CH₂-CH₂.

Claim 54 (new): The method of claim 48, wherein the compound is

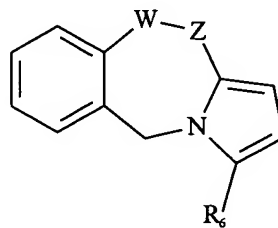


and R₆ is CH₂N(CH₂CH₂)₂NCH₃.

Claim 55 (new): A method of treating HIV infection in a subject, comprising administering to the subject a therapeutically effective amount of a compound selected from the group consisting of:



or



wherein

X-Y is S-CH₂, CH₂-S, S(O)-CH₂, CH₂-S(O), or CH₂CH₂;

W is S or O;

R₁ is H or NO₂;

R₂ is H, halogen, lower alkyl or lower alkoxy;

R₃ is H;

R₄ is hydroxy or H;

R₅ is phenyl or N(CH₂CH₂)₂NCH₃; and

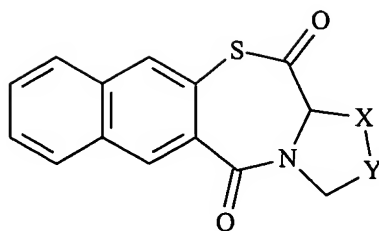
provided that R₁ and R₂ are not both H or not both alkoxy.

O=C1NC(=O)c2cc(R1)c(R2)cc2S1C(=O)X

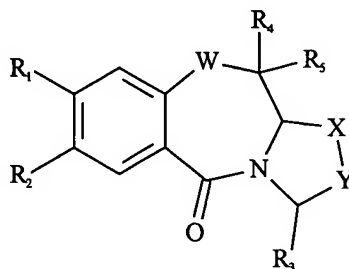
provided that R₁ and R₂ are not both H or not both alkoxy.

R₁ is H, R₂ is OCH₃, X-Y is CH₂-S(O).

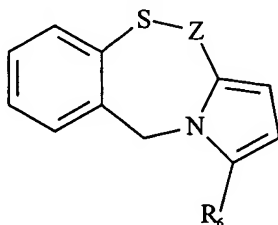
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Claim 59 (new): The method of claim 55, wherein X-Y is S-CH₂.



Claim 61 (new): The method of claim 55, wherein the compound is



and R₆ is CH₂N(CH₂CH₂)₂NCH₃.